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09/429,632	10/29/1999	SHIGEO MATSUZAWA	040301/0575	6154

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EXAMINER
HO, CHUONG T

ART UNIT	PAPER NUMBER
2664	

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DATE MAILED: 05/04/2004 11

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/429,632	Applicant(s) MATSUZAWA ET AL.	
	Examiner Chuong Ho	Art Unit 2664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 February 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The amendment filed 02/11/04 have been entered and made of record.

2. Applicant's amendment with respect to claims 1- 22 have been considered but are not persuasive.

As per to Applicant's argument, the Applicant alleged that "page 10, lines 6-7, Han (U.S.Patent No. 6,351,465 B1) fails to disclose or suggest any selection of a next hop router".

The Applicant's argument is not persuasive.

Han discloses selection of a next hop router (see figure 4, figure 5, col. 6, lines 52, the ATM router 50 maintains the cell counts of a path and can monitor the traffic, col. 7, lines 34-36, the algorithm used to decide which cut-through paths to tear down can be either least recently used path or the path which carries least traffic based on statistical analysis). Therefore, Han discloses or suggests selection of a next hop router in limitations of independent claims.

Applicant alleged that "page 10, lines 19, theis portion of Civanlar has nothing at all to do with a load balancing among a plurality of other routers connected to a specific router. This portion of Civanlar also fails to discloses or suggest anything related to selecting a next hop router for the purpose of contributing to a load balancing among routers"

The Applicant's argument is not persuasive.

Civanlar discloses a load balancing among a plurality of other routers connected to a specific router (see figure 3, col. 9, lines 28-45, Each IPRS 120-123 stores a forwarding table in memory, each of which has substantially the same structure as that shown in Table 2 above...least

cost path to the next IPRS in a IP packet's transmission path....Moreover, if PORT ID (2) is selected and **load balancing** is enable) (see col. 9, lines 54-60, the forwarding table in each IPRS and IPRR are also dynamically updated based on the topology or link-state of the network. Thus, when the topology of the network changes by the addition or subtraction of IPRSs and/or IPRSs, the optiman paths across the core network may change and the forwarding table change accordingly). Therefore, Civanlar clearly discloses or suggests a loading balancing among a plurality of othter router connected to a specific router (IPRSs 120-123).

3. Claims 1-22 are pending.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 2, 4, 10, 13, 14, 15, 16, 17, 19, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Han (U.S.Patent No. 6,351,465 B1) in view of Civanlar et al. (U.S.Patent No. 5,996,021).

In the claim 1, see figures 4-5, Han discloses the system uses ATM switches as high performance Internet router by using standard ATM signaling to set up cut-through paths; comprising:

- a cut-through path control system at a router device (ATM router 50) at which multi-path exists (43, 45), comprising the steps of:
- selecting one router among a plurality of routers (42, 44, 46, 48) that can possibly be a next hop router (see col. 6, lines 1-8, col. 7, lines 1-7);
- setting up the cut-through path with one router as the next hop router (see col. 6, lines 26-35).

However, Han is silent to disclose selecting one router among a plurality of routers so as to contribute a load balancing.

Civanlar et al. discloses the relay switch network communicates with the ingress router, receives the IP packet from the ingress router and forwards the IP packet along its transmission path based on destination information included in its attached label. The egress router receives the IP packet from the switch network and forwards it to a destination network (see abstract); comprising:

- selecting one router among a plurality of routers so as to contributye a load balancing (see col. 9, lines 28-45, lines 54-59);
- according to a whole or a prescribed part of information regarding a state of cut-through path set-up in which the router device is involved (see col. 9, lines 28-45, lines 54-59), at a time of setting up a cut-through path in the multi-path.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Han's system with the teaching of Civanlar to select one router among a

plurality of routers in order to contribute the load balancing. Therefore, the combined system would have been enable the cut-throudh paths with respect to the routers can be balanced overall.

6. In the claims 2, 13, 15, Han discloses the selecting one router according to a number of already set up cut-through paths such that number of cut-through paths at plurality of routers are uniformly distrubuted among plurality of routers (see col. 6, lines 30-55).

7. In the claims 4, 16, Han discloses selecting one router according to a number of already set up cut-through paths such that numbers of cut-through paths at plurality of routers are evently distributed among plurality of routers according to link rates with respect to plurality of routers (see col. 6, lines 30-55).

8. In the claim 10, see figures 4-5, Han discloses the system uses ATM switches as high performance Internet router by using standard ATM signaling to set up cut-through paths; comprising:

- a cut-through path control system at a router device (ATM router 50) at which multi-path exists (43, 45), comprising the steps of:
- selecting one router among a plurality of routers (42, 44, 46, 48) that can possibly be a next hop router (see col. 6, lines 1-8, col. 7, lines 1-7);
- setting up the cut-through path with one router as the next hop router (see col. 6, lines 26-35).

However, Han is silent to disclose selecting one router among a plurality of routers so as to contribute a load balancing.

Civanlar et al. discloses the relay switch network communicates with the ingress router, receives the IP packet from the ingress router and forwards the IP packet along its transmission path based on destination information included in its attached label. The egress router receives the IP packet from the switch network and forwards it to a destination network (see abstract); comprising:

- selecting one router among a plurality of routers so as to contributye a load balancing (see col. 9, lines 28-45, lines 54-59);
- according to a whole or a prescribed part of information regarding a state of cut-through path set-up in which the router device is involved (see col. 9, lines 28-45, lines 54-59), at a time of setting up a cut-through path in the multi-path.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Han's system with the teaching of Civanlar to select one router among a plurality of routers in order to contribute the load balancing. Therefore, the combined system would have been enable the cut-throudh paths with respect to the routers can be balanced overall.

9. In the claim 14, see figures 4-5, Han discloses the system uses ATM switches as high performance Internet router by using standard ATM signaling to set up cut-through paths; comprising:

- a cut-through path control system at a router device (ATM router 50) at which multi-path exists (43, 45), comprising the steps of:

- selecting one router among a plurality of routers (42, 44, 46, 48) that can possibly be a next hop router (see col. 6, lines 1-8, col. 7, lines 1-7);
- setting up the cut-through path with one router as the next hop router (see col. 6, lines 26-35).

However, Han is silent to disclose selecting one router among a plurality of routers so as to contribute a load balancing.

Civanlar et al. discloses the relay switch network communicates with the ingress router, receives the IP packet from the ingress router and forwards the IP packet along its transmission path based on destination information included in its attached label. The egress router receives the IP packet from the switch network and forwards it to a destination network (see abstract); comprising:

- selecting one router among a plurality of routers so as to contributye a load balancing (see col. 9, lines 28-45, lines 54-59);
- according to a whole or a prescribed part of information regarding a state of cut-through path set-up in which the router device is involved (see col. 9, lines 28-45, lines 54-59), at a time of setting up a cut-through path in the multi-path.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Han's system with the teaching of Civanlar to select one router among a plurality of routers in order to contribute the load balancing. Therefore, the combined system would have been enable the cut-throudh paths with respect to the routers can be balanced overall.

10. In the claim 17, see figures 4-5, Han discloses the system uses ATM switches as high performance Internet router by using standard ATM signaling to set up cut-through paths; comprising:

- a cut-through path control system at a router device (ATM router 50) at which multi-path exists (43, 45), comprising the steps of:
- selecting one router among a plurality of routers (42, 44, 46, 48) that can possibly be a next hop router (see col. 6, lines 1-8, col. 7, lines 1-7);
- setting up the cut-through path with one router as the next hop router (see col. 6, lines 26-35).

However, Han is silent to disclose selecting one router among a plurality of routers so as to contribute a load balancing.

Civanlar et al. discloses the relay switch network communicates with the ingress router, receives the IP packet from the ingress router and forwards the IP packet along its transmission path based on destination information included in its attached label. The egress router receives the IP packet from the switch network and forwards it to a destination network (see abstract); comprising:

- selecting one router among a plurality of routers so as to contributye a load balancing (see col. 9, lines 28-45, lines 54-59);

- according to a whole or a prescribed part of information regarding a state of cut-through path set-up in which the router device is involved (see col. 9, lines 28-45, lines 54-59), at a time of setting up a cut-through path in the multi-path.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Han's system with the teaching of Civanlar to select one router among a plurality of routers in order to contribute the load balancing. Therefore, the combined system would have been enable the cut-throudh paths with respect to the routers can be balanced overall.

11. In the claim 19, see figures 4-5, Han discloses the system uses ATM switches as high performance Internet router by using standard ATM signaling to set up cut-through paths; comprising:

- a cut-through path control system at a router device (ATM router 50) at which multi-path exists (43, 45), comprising the steps of:
- selecting one router among a plurality of routers (42, 44, 46, 48) that can possibly be a next hop router (see col. 6, lines 1-8, col. 7, lines 1-7);
- setting up the cut-through path with one router as the next hop router (see col. 6, lines 26-35).

However, Han is silent to disclose selecting one router among a plurality of routers so as to contribute a load balancing.

Civanlar et al. discloses the relay switch network communicates with the ingress router, receives the IP packet from the ingress router and forwards the IP packet along its transmission

path based on destination information included in its attached label. The egress router receives the IP packet from the switch network and forwards it to a destination network (see abstract); comprising:

- selecting one router among a plurality of routers so as to contributye a load balancing (see col. 9, lines 28-45, lines 54-59);
- according to a whole or a prescribed part of information regarding a state of cut-through path set-up in which the router device is involved (see col. 9, lines 28-45, lines 54-59), at a time of setting up a cut-through path in the multi-path.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Han's system with the teaching of Civanlar to select one router among a plurality of routers in order to contribute the load balancing. Therefore, the combined system would have been enable the cut-throudh paths with respect to the routers can be balanced overall.

12. In the claim 20, see figures 4-5, Han discloses the system uses ATM switches as high performance Internet router by using standard ATM signaling to set up cut-through paths; comprising:

- a cut-through path control system at a router device (ATM router 50) at which multi-path exists (43, 45), comprising the steps of:
- selecting one router among a plurality of routers (42, 44, 46, 48) that can possibly be a next hop router (see col. 6, lines 1-8, col. 7, lines 1-7);

- setting up the cut-through path with one router as the next hop router (see col. 6, lines 26-35).

However, Han is silent to disclose selecting one router among a plurality of routers so as to contribute a load balancing.

Civanlar et al. discloses the relay switch network communicates with the ingress router, receives the IP packet from the ingress router and forwards the IP packet along its transmission path based on destination information included in its attached label. The egress router receives the IP packet from the switch network and forwards it to a destination network (see abstract); comprising:

- selecting one router among a plurality of routers so as to contributye a load balancing (see col. 9, lines 28-45, lines 54-59);
- according to a whole or a prescribed part of information regarding a state of cut-through path set-up in which the router device is involved (see col. 9, lines 28-45, lines 54-59), at a time of setting up a cut-through path in the multi-path.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Han's system with the teaching of Civanlar to select one router among a plurality of routers in order to contribute the load balancing. Therefore, the combined system would have been enable the cut-throudh paths with respect to the routers can be balanced overall.

13. Claims 3, 5, 6,7,8, 9, 11, 12, 18, and 21, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined system of Han (6351465)- Civanlar(5996021) in view Katsube et al. (U.S.Patent No. 6,185,213 B1).

In the claim 3, the combined system of Han-Civanlar discloses the limitations of claim 2 above.

However, the combined system of Han - Civanlar is silent to disclose assigning possible residue values starting from O that are obtainable by dividing a given integer by a total number of plurality of routers, respectively to plurality of routers, one residue value per each router; selecting one of plurality of routers which is assigned with a residue value obtained by dividing the number of already set up cut-through paths by the total number of plurality of routers as one router.

Katsube et al. discloses assigning possible residue values starting from O that are obtainable by dividing a given integer by a total number of plurality of routers, respectively to plurality of routers, one residue value per each router (see col. 7, lines 29-31); selecting one of plurality of routers which is assigned with a residue value obtained by dividing the number of already set up cut-through paths by the total number of plurality of routers as one router (see col. 8, lines 50-67, col. 9, lines 1-4).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify combined system (Han - Civanlar) with the teaching of Katsube to select one of plurality of routers which is assigned with a residue value (dividing the number set up cut-

through paths by the total number of plurality of routers) in order to judge the next hop information.

14. In the claims 5, 12, Katsube et al. discloses assigning possible residue values starting from O that are obtainable by dividing a given integer by a total of elements constituting an integer ratio indicating or approximating a ratio of the link rates with respect to plurality of routers, respectively to plurality of routers, as may residues values as a number proportional to a link rate with respect to each router per each router; and selecting one of plurality of routers which is assigned with residue value obtained by dividing the number of already set up cut-through paths by the total of the elements constituting the integer ratio as one router (see col. 8, lines 40-67, col. 9, lines 1-4).

15. In the claim 6, Katsube et al. discloses sending a message for setting up the cut-through path to one router; and making an information setting necessary for utilizing the cut-through path when the cut-through path is set up (see col. 10, lines 6-25).

16. In the claim 7, Katsube et al. discloses sending a message for setting up the cut-through path to one router when no other already set up cut-through path to one router exists, and making an information setting necessary for utilizing the cut-through path when the cut-through path is set up; and making another information setting necessary for merging the cut-through path with an already set up cut-through path to one router when the already set up cut-through path exists (see col. 10, lines 5-25).

17. In the claim 8, 21, Katsube et al. discloses the setting up of the cut-through path starts a timing of receiving a message for setting up the cut-through path from a node device on an upstream side (see col. 10, lines 53-55).

18. In the claims 9, 11, 18, Katsube et al. discloses selecting one cut-through path that contributes to the load balancing when a route change is made, among cut-through paths for which the route change at the router device is possible; and changing a route of one cut-through path so as to contribute to the load balancing (see col. 2, lines 45-50).

19. In the claim 22, Katsube et al. discloses the control unit sends a message for setting up the cut-through path to one router, and makes an information setting necessary for utilizing the cut-through path when the cut-through path is set up (see col. 8, lines 40-67, col. 9, lines 1-4).

20. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Application Number: 09/429,632

Art Unit: 2664

Conclusion

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuong Ho whose telephone number is (703)306-4529. The examiner can normally be reached on Monday-Friday from 9am to 3pm.

22. If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington, Chin, can be reached on (703)305-4633.

Any inquiry of a general nature or relating to the status of this application or proceeding should be direct to the group receptionist whose telephone number is (703) 305-3900.

CH

Date 04-20-04.

WELLINGTON CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600